Scoping Summary Report for the Global Nuclear Energy Partnership Technology Demonstration Program Environmental Impact Statement Advance Notice of Intent

Department of Energy
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1.0 Introduction

On March 22, 2006, the Department of Energy (DOE) published an Advance Notice of Intent (ANOI) for the Global Nuclear Energy Partnership Technology Demonstration Program Environmental Impact Statement (GNEP TDP EIS) in the *Federal Register* (71 FR 14505). That ANOI explains the goals of GNEP, the three major elements of the GNEP Technology Demonstration Program, the purpose and need for action, and a list of potential environmental issues for analysis. The ANOI also invited comments on the proposed scope, alternatives, and environmental issues to be analyzed in the GNEP TDP EIS. The comment period for the ANOI ended on May 8, 2006.

The purpose of the GNEP Technology Demonstration Program is to demonstrate certain technologies that could change the way spent nuclear fuel from commercial light-water nuclear power reactors is managed. The GNEP TDP EIS will inform DOE officials and the public of the potential environmental impacts associated with the proposed action and the reasonable alternatives. The proposed action is to demonstrate, at an engineering scale, the United States (U.S.) capability to safely recycle spent nuclear fuel using proliferation-resistant separation processes and the conversion of transuranics into shorter-lived radioisotopes. The proposed action includes projects for three key elements that would comprise a proliferation-resistant closed fuel cycle: (1) the demonstration of separation processes in which usable and waste materials that are found in spent nuclear fuel are separated; (2) the demonstration of the conversion of transuranics; and (3) the demonstration of an advanced fuel fabrication process.

After the ANOI comment period ended on May 8, 2006, DOE considered all comments received and prepared this ANOI Scoping Summary Report. DOE also considered the comments received on the ANOI to develop the GNEP TDP EIS Notice of Intent (NOI), which is expected to be published in the *Federal Register* in June 2006. DOE received more than 800 comment letters and verbal comments related to the GNEP Technology Demonstration Program as a result of the ANOI. Of the comment letters, more than 750 were part of a campaign letter, which contained similar substantive comments. Appendix A contains a copy of all comment letters received. For the campaign letter, only one representative copy is included in Appendix A. Table A-1, which

follows that campaign letter, lists the names of people who submitted an identical or very similar letter compared to the representative letter.

2.0 Scoping Comments

DOE has considered all scoping comments received in response to the GNEP TDP EIS ANOI. The major issues identified centered on the following issues:

- Commentors stated that DOE should prepare a programmatic EIS (PEIS) of the entire GNEP Program, not just the GNEP Technology Demonstration Program
- Commentors stated that DOE should pursue alternatives to nuclear power and GNEP
- Commentors stated that DOE is proceeding with Federal actions related to GNEP before conducting the required NEPA analyses

The following paragraphs summarize the comments received, and include DOE's responses.

1. Commentors stated that DOE should withdraw the ANOI for the GNEP Technology Demonstration Program and proceed with a PEIS of the entire GNEP Program. Some commentors added that the GNEP Technology Demonstration Program is "inextricably linked" to the broader program, and that important elements of the "Technology Demonstration Program" are being influenced or even determined by the planning for the full GNEP Program. Some commentors did not think that waiting to prepare a PEIS for the entire GNEP Program would suffice.

DOE response: *The United States has not demonstrated the capability, on an engineering scale, to safely recycle spent nuclear fuel using proliferation-resistant separation processes and convert transuranics into shorter-lived* radioisotopes. *Until that capability is demonstrated on an engineering scale, DOE does not think that preparing a PEIS for the GNEP Program is appropriate. If the GNEP Technology Demonstration Program achieves its goal of demonstrating the three key elements that would comprise a proliferation-resistant closed fuel cycle, DOE anticipates preparing a separate NEPA analysis at a later date that would address the environmental impacts of potential future actions to encourage the commercial-scale*

adoption of these technologies for the management of spent nuclear fuel from commercial nuclear power reactors, as well as alternatives. At that time, DOE anticipates preparing a PEIS that would address the potential environmental consequences of the widespread deployment of proliferation-resistant spent nuclear fuel separation technologies, technologies that consume transuranics while extracting their energy, and fuel fabrication technologies, including those technologies that are the subject of the Technology Demonstration Program.

2. Commentors stated that the GNEP Technology Demonstration Program should be more accurately termed the "Prototype GNEP Facility Construction Program" because of the significant costs and the large amount of construction proposed.

DOE response: *DOE agrees that the GNEP Technology Demonstration Program could involve significant costs and potentially large amounts of construction. The GNEP TDP EIS will assess the environmental impacts of the construction activities associated with the reasonable alternatives. Separately from the EIS, DOE will prepare cost analyses for the GNEP Technology Demonstration alternatives, which will be one of the considerations in the Record of Decision (ROD).*

3. Commentors stated that DOE has taken specific steps that demonstrate a clear commitment to expenditure of resources on GNEP before any programmatic analysis has been undertaken. Commentor cited the halting of cleanup and decommissioning of the F-Canyon at Savannah River Site as an example. Commentor also cited the initiation of pre-conceptual design activities for the "Engineering Scale Demonstration [ESD] of the Advanced Fuel Cycle Initiative."

DOE response: *DOE has complied fully with all environmental laws and regulations related to the GNEP Technology Demonstration Program and the GNEP Program. Expending resources prior to preparing NEPA documentation is not prohibited by any law or regulation. In fact, Federal agencies routinely expend resources on projects prior to NEPA review. Such actions are allowable prior to a ROD so long as the action would not "have an adverse environmental impact" or "limit the choice of reasonable alternatives" (see 40 CFR 1506.1). A*

prime example of the allowable expenditure of resources prior to a ROD involves the development of information to support the NEPA review. For example, one of the activities cited by the commentors--- initiating pre-conceptual design activities for the ESD-- will be used to develop data to support the GNEP TDP EIS. As for the other example cited by the commentors-- halting the cleanup and decommissioning of the F-Canyon at Savannah River Site-- halting that activity will enable DOE to assess the use of F-Canyon as a potential alternative for the proposed action to demonstrate separation processes in which usable and waste materials that are found in spent nuclear fuel are separated.

4. Commentors stated that the scope of the ANOI and proposed EIS is inadequate in that it does not include the international component of GNEP.

DOE response: *The GNEP TDP EIS will assess all reasonable alternatives for accomplishing the goals for the GNEP Technology Demonstration Program, as established by the purpose and need for the proposed action. Any "international activities" that are developed as part of the reasonable alternatives for the GNEP TDP EIS will be assessed, as appropriate.*

5. Commentors questioned the capacity of the ESD facility. Commentors questioned whether the capacity was related to the need to provide starter fuel for Advanced Burner Reactors that would be deployed in 2022.

DOE response: *The capacity of the proposed ESD would be approximately 50-100 metric tons of spent fuel per year. This capacity would enable DOE to demonstrate, on an engineering scale, the separation of usable and waste materials found in spent nuclear fuel.*

6. Commentors stated that the decontamination and decommissioning (D&D) costs and impacts of GNEP should be considered upfront.

DOE response: *Separately from the EIS, DOE will prepare cost analyses for the GNEP Technology Demonstration alternatives, which will be one of the considerations in the ROD. D&D costs will be considered in those cost analyses. The GNEP TDP EIS will include an*

assessment of the environmental impacts of D&D, to the extent those activities are quantifiable. However, it should be recognized that any such D&D activites would not occur until GNEP Technology Demonstration facilities reach their end-of-life, which could be many decades after operations begin.

7. Commentors expressed opposition to GNEP specifically, and nuclear power in general. Commentors stated that the GNEP program cannot meet its goals "to enable an expansion of nuclear power in the U.S. and around the world, to promote non-proliferation goals, and to help resolve nuclear waste disposal issues." Commentors stated that reprocessing and fast reactors are expensive, polluting, have a history of technical problems, will not prevent the proliferation of nuclear weapons materials, and cannot eliminate our country's waste problem.

DOE response: *Opposition to GNEP and nuclear power is noted. Whether or not the GNEP Program can meet its goals is beyond the scope of the GNEP TDP EIS, which is focused on demonstrating, at an engineering scale, the U.S. capability to safely recycle spent nuclear fuel using proliferation-resistant separation processes and the conversion of transuranics into shorter-lived radioisotopes. If the GNEP Technology Demonstration Program achieves its goal of demonstrating the three key elements that would comprise a proliferation-resistant closed fuel cycle, DOE anticipates preparing a separate NEPA analysis at a later date that would address the environmental impacts of potential future actions to encourage the commercial-scale adoption of these technologies for the management of spent nuclear fuel from commercial nuclear power reactors, as well as alternatives. At that time, DOE anticipates preparing a PEIS that would address the potential environmental consequences of the widespread deployment of proliferation-resistant spent nuclear fuel separation technologies, technologies that consume transuranics while extracting their energy, and fuel fabrication technologies, including those technologies that are the subject of the Technology Demonstration Program. The issue of whether or not the GNEP Program can meet its goals would be a consideration in the ROD for that PEIS.*

8. Commentors urged DOE to abandon the GNEP proposal and pursue alternatives to nuclear power. Commentors stated that renewable energy technologies - such as wind, solar,

advanced hydroelectric and some types of biomass and geothermal energy - are cleaner and safer technologies, and can completely meet U.S. energy needs over the coming decades.

DOE response: *The issues of alternatives to nuclear power are beyond the scope of the GNEP TDP EIS. Those issues could be relevant to a PEIS that DOE might prepare if the GNEP Technology Demonstration Program is successful.*

9. Commentors stated that GNEP is a premature and misguided proposal with high costs, major environmental hazards and significant risks to international security. The commentors requested that the following alternatives to GNEP be considered:

a. no action— do not pursue GNEP
b. global non-nuclear/energy partnership— develop and promote non-nuclear incentives and technologies for electricity production
c. no-transuranic, nonproliferation plus— do not construct 3 technology demonstration technologies, terminate research and development (R&D) related to these elements, and continue to rely on once-through fuel cycle
d. nonproliferation plus with recycle hedges— do not construct 3 technology demonstration technologies, pursue modest R&D related to these elements; construction of any demonstration facility would be contingent on National Academy of Science review of the GNEP Technology Demonstration Program.
e. carbon stabilization/non-proliferation plus— combines elements of the "global non-nuclear energy partnership" and the "no-transuranic, nonproliferation plus" alternative described above in "b" and "c".

DOE response: *The GNEP TDP EIS will assess all reasonable alternatives, plus the No Action Alternative, for accomplishing the goals for the GNEP Technology Demonstration Program, as established by the purpose and need for the proposed action. Under the No Action Alternative, DOE would not pursue the GNEP Technology Demonstration Program, no major new GNEP Technology Demonstration Program projects would be constructed and operated, and DOE would continue to pursue Advanced Fuel Cycle Initiatives using existing facilities and technologies. The No Action Alternative would be essentially equivalent to Alternative "c" (as*

described above). Alternatives "b" and "e" (as described above) are beyond the scope of the GNEP TDP EIS. Those alternatives might be relevant to a PEIS that DOE might prepare if the GNEP Technology Demonstration Program is successful. Alternative "d" above would be encompassed by the proposed action in the GNEP TDP EIS, with the exception of the contingency that the National Academy of Science review of the GNEP Technology Demonstration Program. However, DOE notes that a National Academy of Science review of the GNEP Technology Demonstration Program would not, in and of itself, result in any environmental impacts.

10. Commentors stated that DOE should prepare a study on energy-supply economics before proceeding with GNEP. Commentors stated that DOE should prepare a cost-benefit analysis and system-wide cost assessment of GNEP.

DOE response: *The issues of an energy-supply economics study, a cost-benefit analysis of GNEP, and system-wide cost assessment of GNEP are beyond the scope of the GNEP TDP EIS. Those issues could be relevant to a PEIS that DOE might prepare subsequent to the GNEP Technology Demonstration Program.*

11. Commentors stated that DOE should prepare a nonproliferation study before proceeding with GNEP.

DOE response: *The issue of a nonproliferation study is beyond the scope of the GNEP TDP EIS. That issue could be relevant to a PEIS that DOE might prepare if the GNEP Technology Demonstration Program is successful*

12. Commentors questioned the need for reprocessing spent nuclear fuel. Commentors stated that reprocessing spent fuel will not solve the nation's radioactive waste storage problems. Specifically, commentors stated that reprocessing would:

a. not eliminate the need for a repository;
b. have the highest air emissions and generate large quantities of radioactive waste;
c. threaten public health and environmental safety;
d. entail significant radiological transportation and associated accident risks;

e. overturn 30 years of nonproliferation practice and increases vulnerability to theft/terrorism;
f. be more expensive than the once-through fuel cycle.

DOE response: *The GNEP TDP EIS will assess the direct, indirect, and cumulative environmental impacts of all reasonable alternatives, plus the No Action Alternative, for accomplishing the goals for the GNEP Technology Demonstration Program. The purpose and need for the proposed action will be articulated in the GNEP TDP EIS. DOE agrees that reprocessing spent nuclear fuel would not eliminate the need for a repository. The GNEP TDP EIS will assess the environmental impacts of the GNEP TDP EIS alternatives, including air emissions, wastes generated, human health and accident risks, and radiological transportation. The issue nonproliferation is beyond the scope of the GNEP TDP EIS. That issue could be relevant to a PEIS that DOE might prepare if the GNEP Technology Demonstration Program is successful. Whether or not reprocessing spent nuclear fuel is more expensive than the once-through fuel cycle is beyond the scope of the GNEP TDP EIS.*

13. Commentors requested that DOE hold scoping meetings across U.S., and specifically requested meetings in South Carolina, Georgia, Utah, Illinois, Washington, Oregon, and New York.

DOE response: *DOE intends to hold public scoping meetings in the vicinity of all sites that might be affected by the GNEP TDP EIS alternatives. The NOI lists the scoping meeting locations.*

14. Commentors expressed concern over the potential impact on Yucca Mountain funding and stated that DOE should only pursue the GNEP Demonstration Program if work at the Yucca Mountain repository continues at an adequately funded level.

DOE response: *Funding issues associated with Yucca Mountain are beyond the scope of the GNEP TDP EIS.*

15. Commentors stated that the EIS should explicitly include an evaluation of the types of wastes that will result and the alternatives for management, transportation, and ultimate disposal. Commentors stated that the EIS must identify how alternatives will avoid and minimize impacts.

DOE response: *The GNEP TDP EIS will assess the direct, indirect, and cumulative environmental impacts of all reasonable alternatives, plus the No Action Alternative, for accomplishing the goals for the GNEP Technology Demonstration Program. The GNEP TDP EIS will include an evaluation of the types of wastes that will result and the alternatives for management, transportation, and ultimate disposal. The EIS will also identify how alternatives will avoid and minimize impacts.*

16. Commentors stated that an adequate and comprehensive transportation plan must be developed for GNEP Technology Demonstration Program wastes. Commentors expressed the opinion that states will need financial assistance to adequately prepare for waste shipments.

DOE response: *The GNEP TDP EIS will assess the direct, indirect, and cumulative environmental impacts of transportation for all reasonable alternatives, plus the No Action Alternative. Issues related to the development of a transportation plan and financial assistance to states are beyond the scope of the GNEP TDP EIS.*

17. Commentors stated that in identifying potential sites for the GNEP Technology Demonstration Program facilities, DOE should give consideration to impacts on transportation.

DOE response: *The GNEP TDP EIS will assess the direct, indirect, and cumulative environmental impacts of transportation for all reasonable alternatives, plus the No Action Alternative. The ROD will explain the rationale for any DOE decision, which could include consideration of impacts related to transportation.*

18. Commentors stated that GNEP Technology Demonstration Program facilities should be licensed by the Nuclear Regulatory Commission (NRC), and that all transportation of radiological material be conducted in NRC-certified containers and comply with all applicable NRC and Department of Transportation regulations.

DOE response: *All GNEP Technology Demonstration Program facilities would comply with all applicable laws and regulations. The GNEP TDP EIS will identify and discuss relevant regulatory requirements for all EIS alternatives. Transportation of radiological material would be conducted in NRC-certified containers and comply with all applicable NRC and Department of Transportation regulations.*

19. Commentors stated that the transportation impacts be compared with the current program (once-through fuel cycle with no reprocessing).

DOE response: *The GNEP TDP EIS will assess the direct, indirect, and cumulative environmental impacts of transportation for all reasonable alternatives, plus the No Action Alternative.*

20. Commentors stated that the transportation impacts include an analysis of health and safety impacts for normal transport, accident conditions, and security risks (sabotage, terrorism). Commentors stated that targets for terrorist attack will increase due to increased shipments of nuclear materials.

DOE response: *The GNEP TDP EIS will assess the direct, indirect, and cumulative environmental impacts of transportation for all reasonable alternatives, plus the No Action Alternative. Health and safety impacts for both normal and accident conditions will be assessed. Security/terrorist risks will be considered in preparing the accident analysis.*

21. Commentors suggested that a comprehensive security analysis be prepared, including a nuclear terrorism/threat assessment associated with GNEP.

DOE response: *Security risks will be considered in preparing the accident analysis portion of the GNEP TDP EIS. The issue of preparing a comprehensive security analysis is beyond the scope of the EIS.*

22. Commentors stated that the EIS include an assessment of the health and safety risks from GNEP shipments involved in "long-duration" fires. Commentor stated that the consequences of a "potential meltdown" of reactors should be assessed.

DOE response: *The GNEP TDP EIS will assess the direct, indirect, and cumulative environmental impacts for all reasonable alternatives, plus the No Action Alternative. Health and safety risks for accident conditions will be assessed. Long-duration fires will be considered in developing the reasonable accident scenarios.*

23. Commentors stated that the NOI explain the relationship of the GNEP Technology Demonstration Program to any other NEPA analyses that may be required by NRC licensing actions and the cooperating agencies that will be involved in the preparation and review of the EIS.

DOE response*: The GNEP TDP EIS will identify and discuss relevant regulatory requirements for all EIS alternatives, including any relationships to any other NEPA analyses that may be required by the NRC. The NOI requests any agency, state, pueblo, tribe, or unit of local government that desires to be designated a cooperating agency to contact DOE.*

24. Commentors stated that the technologies involved in the GNEP Technology Demonstration Program have not reached a level of maturity to perform a realistic or sensible analysis. Commentors stated that these technologies are not proliferation-resistant.

DOE response: *The United States has not demonstrated the capability, on an engineering scale, to safely recycle spent nuclear fuel using proliferation-resistant separation processes and convert transuranics into shorter-lived radioisotopes. The purpose of the GNEP Technology Demonstration Program is to demonstrate that capability. DOE thinks that a realistic and sensible EIS can be prepared to support a ROD related to the GNEP Technology Demonstration Program. DOE disagrees that the technologies involved in the GNEP Technology Demonstration Program are not proliferation-resistant. The proposed action includes projects for three key elements that would comprise a proliferation-resistant closed fuel cycle: (1) the demonstration of separation processes in which usable and waste materials that are found in spent nuclear fuel are separated; (2) the demonstration of the conversion* of *transuranics; and (3) the demonstration of an advanced fuel fabrication process.*

25. Commentors stated that the GNEP TDP EIS presumes a favorable government decision on the purpose and need for GNEP, which has not been made; commentors stated that this is contrary to Council on Environmental Quality regulations.

DOE response: *The GNEP TDP EIS does not presume any favorable decision on the GNEP purpose and need. If the GNEP Technology Demonstration Program achieves its goal of demonstrating the three key elements that would comprise a proliferation-resistant closed fuel cycle, DOE anticipates preparing a separate NEPA analysis at a later date that would address the environmental impacts of potential future actions to encourage the commercial-scale adoption of these technologies for the management of spent nuclear fuel from commercial nuclear power reactors, as well as alternatives. At that time, DOE anticipates preparing a PEIS that would address the potential environmental consequences of the widespread deployment of proliferation-resistant spent nuclear fuel separation technologies, technologies that consume transuranics while extracting their energy, and fuel fabrication technologies, including those technologies that are the subject of the Technology Demonstration Program. If the GNEP Technology Demonstration Program does not achieve its goal then DOE might not be in a position to propose a GNEP PEIS.*

26. Commentors stated that the existing environmental "messes" be cleaned up before proceeding with new programs that will create more "messes". Commentors stated that taxpayer money should be spent on environmental clean-up and decommissioning of existing reactors.

DOE response: *DOE is conducting site-specific clean-up measures at previously contaminated sites. Those clean-up actions are independent of the scope of the GNEP TDP EIS. Whether or not to proceed with the GNEP Technology Demonstration Program will be decided in the ROD for the GNEP TDP EIS. Each year, Congress passes legislation defining the level of funding to meet Administration and Congressional policy direction. DOE implements U. S. policy as established by the President and Congress. Decisions related to the use of taxpayer money are beyond the scope of the EIS.*

27. Commentor stated that the "demonstration of the conversion of transuranics" should specifically include a demonstration of low-energy nuclear reactions through the proper application of electromagnetic energy, as well as low-energy hydrogen capture.

DOE response: *DOE will evaluate this proposal for reasonableness related to the demonstration of the conversion of transuranics. If determined to be reasonable, DOE will assess the application of electromagnetic energy and/or low-energy hydrogen capture as a reasonable technology alternative in the GNEP TDP EIS. If determined to be unreasonable, DOE will explain why this technology was eliminated from detailed study in the GNEP TDP EIS.*

28. Commentors expressed support for GNEP. Commentors stated that existing facilities should be used to the maximum extent possible in order to reduce costs and accelerate the development of GNEP. Commentors suggested that the Fast Flux Test Facility (FFTF) and the Fuels Materials Examination Facility (FMEF) at Hanford be used for the GNEP Technology Demonstration Program. Commentor suggested that various facilities at the Oak Ridge National Laboratory (ORNL) are available for the GNEP Technology Demonstration Program, including the Radiochemical Engineering Development Center (REDC) Buildings 7920, 7930, the Irradiated Fuels Examination Laboratory Building 3525 and the Irradiated Materials Examination Laboratory Building 3025E.

DOE response: *Support for GNEP is noted. DOE is evaluating the potential use of existing facilities, including those facilities identified above, for the GNEP Technology Demonstration Program. The NOI will identify the reasonable site alternatives for the GNEP Technology Demonstration Program, including any existing facilities that may be considered. The GNEP TDP EIS will explain why any existing facility that is not considered to be reasonable was eliminated from detailed study.*

29. Commentors stated that the EIS include a discussion of the environmental impacts of the past history of sick workers at previous reprocessing facilities. Commentors stated that the EIS investigate past failures from fast reactors, including the Fermi reactor and Phoenix reactor in France.

DOE response: *The GNEP TDP EIS will assess the direct, indirect, and cumulative environmental impacts of all reasonable alternatives, plus the No Action Alternative, for accomplishing the goals for the GNEP Technology Demonstration Program. Issues regarding past reprocessing and reactor facilities are beyond the scope of the GNEP TDP EIS.*

30. Commentor recommended that the EIS include the alternative of drilling deep shafts into the earth for nuclear waste disposal. Commentors stated that a PEIS be prepared which includes alternatives to reprocessing and transmutation, and specifically stated that the alternatives of dry cask storage and geologic storage be analyzed.

DOE response: *The United States has not demonstrated the capability, on an engineering scale, to safely recycle spent nuclear fuel using proliferation-resistant separation processes and convert transuranics into shorter-lived radioisotopes. The purpose of the GNEP Technology Demonstration Program is to demonstrate that capability. Alternatives related to spent nuclear fuel disposal and nuclear waste disposal are beyond the scope of the GNEP TDP EIS.*

31. Commentor questioned the relationship between GNEP, the GNEP Technology Demonstration Program, the GNEP TDP EIS, and a Congressional plan for "Integrated Spent Fuel Recycling", which includes an EIS.

DOE response: *DOE's strategy for the developing an "integrated spent fuel recycling" plan is embodied by the GNEP and is consistent with Congressional direction. In order to develop an "integrated spent fuel recycling" plan, the DOE has determined that the GNEP Technology Demonstration Program is a necessary precursor to GNEP and any GNEP implementation that may/may not occur. Until the United States demonstrates the capability, on an engineering scale, to safely recycle spent nuclear fuel using proliferation-resistant separation processes and convert transuranics into shorter-lived radioisotopes, DOE is not proposing GNEP implementation. The GNEP TDP EIS is DOE's first step in the NEPA compliance process.*

32. Commentor proposed that an "intermediate burner reactor", such as a Heavy Water Reactor, be considered as a technology alternative in the GNEP TDP EIS. Commentor stated

that the NOI should avoid a limitation of burner reactors to fast-neutron designs. Commentor stated that the intermediate burner reactor would "open the field for the purposes of the GNEP Technology Demonstration Program to advanced heavy water designs". Another commentor stated that: (1) thermal and epithermal options be evaluated in the EIS; (2) front-end aqueous processes for the preparation of TRISO particle fuels for UREX+ and other reprocessing options should be included in the EIS; (3) options for deep-burn destruction of transuranics in graphite-moderated, high-temperature reactors; and (4) options for the fabrication of deep-burn TRISO fuels. Another commentor stated that the Modular Helium Reactor be considered, and that all restrictions related to "light water reactor" spent fuel and "fast neutrons" be eliminated. Commentors stated that: (1) the full suite of UREX+ separations technologies be addressed in the EIS; and (2) a full range of transmutation fuels and actinide targets be included in the EIS. Another commentor stated that the smaller, but still significant inventory of naval and other federally-owned spent fuel, must be accounted for in the GNEP Technology Demonstration Program and GNEP.

DOE response: *DOE will evaluate the commentors' suggestions for reasonableness related to the GNEP TDP EIS. If any of the suggestions are determined to be reasonable, DOE will assess them as reasonable alternatives in the GNEP TDP EIS. If determined to be unreasonable, DOE will explain why these suggestions were eliminated from detailed study in the GNEP TDP EIS. The EIS will identify the reasonable alternatives for the GNEP Technology Demonstration Program, including reprocessing and reactor technologies that will be considered. The GNEP TDP EIS will also explain why any technology that is not considered to be reasonable was eliminated from detailed study.*

Appendix A
ANOI Scoping Documents